

**SECTION 09 65 19
RESILIENT TILE FLOORING**

PART 1 – GENERAL

1.01 DESCRIPTION

- A. This section specifies the installation of luxury vinyl tile flooring and accessories.

1.02 RELATED WORK

- A. Color and pattern and location in room finish schedule: Section 09 06 00, SCHEDULE FOR FINISHES.
- B. Resilient Base: Section 09 65 13, RESILIENT BASE AND ACCESSORIES.

1.03 QUALITY CONTROL-QUALIFICATIONS

- A. The Contracting Officer shall approve products or service of proposed manufacturer, suppliers, and installers, and the Contractor shall submit certification that:
1. Installer is approved by manufacturer of materials and has technical qualifications, experience, trained personnel, and facilities to install specified items.
 2. Manufacturer's product submitted has been in satisfactory operation, on three installations similar and equivalent in size to this project for three years. Submit list of installations.
- B. The resilient floor coverings shall meet fire performance characteristics as determined by testing products, per ASTM test method, indicated below by Underwriters Laboratories, Inc. (UL) or another recognized testing and inspecting agency acceptable to authorities having jurisdiction.
1. Critical Radiant Flux: 0.45 watts per sq. cm or more, Class I, per ASTM E648.
 2. Smoke Density: Less than 450 per ASTM E662.
- C. The floor covering manufacturer shall certify that products supplied for installation comply with local regulations controlling use of volatile organic compounds (VOC's).
- D. Single-Source Responsibility: Provide flooring product materials from a single manufacturer.
- E. Contractor to employ and pay for an independent testing agency to verify the moisture content and pH level in the concrete slabs prior to installation of resilient flooring. The testing procedure shall be in accordance with manufacturer's written instructions, ASTM F1869 and F710 standards. The testing process shall be in the presence of the Contracting Officer's Representative (COR).

1.04 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
1. Description of each product.

2. Resilient material manufacturer's recommendations for adhesives, underlayment, primers and polish.
 3. Application and installation instructions.
- C. Samples:
1. Tile: 460 mm by 460 mm (18 inches by 18 inches) for each type, pattern and color.
 2. Edge Strips: 150 mm (6 inches) long, each type.
- D. Certificates and Test Reports:
1. Quality Control Certificate Submittals and lists specified in paragraph, QUALIFICATIONS.
 2. Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria, and physical requirements.
 3. Abrasion resistance: Depth of wear for each tile type and color and volume loss of tile, certified by independent laboratory.
 4. Tested per ASTM F510.
 5. Submit independent testing agency's moisture content and pH level testing report for record

1.05 PROJECT CONDITIONS

- A. Environmental Requirements/Conditions: In accordance with manufacturer's recommendations, areas to receive flooring should be clean, fully enclosed and weathertight with the permanent HVAC system operational and set at a minimum of 68° F (20° C) for a minimum of 7 days prior to, during, and 7 days after the installation. The flooring material should be conditioned in the same manner for at least 48 hours prior to the installation. Maximum temperature should not exceed 100 degrees F after installation. Areas to receive flooring shall be adequately lighted to allow for proper inspection of the substrate, installation and seaming of the flooring, and for final inspection.
- B. Temperature Requirements: Maintain air temperature and relative humidity levels in spaces where products will be installed for time period before, during and after installation as recommended by manufacturer.
- C. Construction in or near areas to receive flooring work shall be complete, dry and cured. Follow flooring manufacturer's recommendations for bond and moisture testing.

1.06 DELIVERY

- A. Deliver materials to the site in original sealed packages or containers, clearly marked with the manufacturer's name or brand, type and color, production run number and date of manufacture.
- B. Materials from containers which have been distorted, damaged or opened prior to installation will be rejected.
- C. Store materials in a clean, dry, enclosed space off the ground, and protected from the weather and from extremes of heat and cold. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.07 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American Society for Testing and Materials (ASTM):
 - D4078-02(2008) Water Emulsion Floor Finish
 - E648-14c Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
 - E662-14 Specific Optical Density of Smoke Generated by Solid Materials
 - E1155-14 Determining Floor Flatness and Floor Levelness Numbers
 - F510/F510M-14 Resistance to Abrasion of Resilient Floor Coverings Using an Abrader with a Grit Feed Method
 - F710-11 Preparing Concrete Floors to Receive Resilient Flooring
 - F1066-04(2010)e1 Vinyl Composition Floor Tile
 - F1700-13a Solid Vinyl Floor Tile
- C. Resilient Floor Covering Institute (RFCI):
 - IP #2 Installation Practice for Vinyl Composition Tile (VCT)
- D. Federal Specifications (Fed. Spec.):
 - SS-T-312 Tile Floor: Asphalt, Rubber, Vinyl and Vinyl Composition

PART 2 – PRODUCTS

2.01 GENERAL

- A. Furnish product type, materials of the same production run and meeting following criteria.
- B. Use adhesives, underlayment, primers and polish recommended by the floor resilient material manufacturer.
- C. Critical Radiant Flux: 0.45 watts per sq. cm or more, Class I, per ASTM E 648.
- D. Smoke density: Less than 450 per ASTM E662.

2.02 LUXURY VINYL TILE

- A. Construction: Luxury Vinyl with Micro-Beveled Edges.
- B. ASTM F1700, 460 mm x 460 mm (18 inches x 18 inches), 2.5 mm (1/10 inch) thick, homogenous throughout.
- C. Wear Layer: Urethane Aluminum Oxide Topcoat cured by UV Process.
- D. Color and Pattern uniformly distributed throughout thickness.
- E. Recycled Content: 30 percent Minimum Pre-Consumer Recycled Content.

2.03 ADHESIVES

- A. Comply with applicable regulations regarding toxic and hazardous materials Green Seal (GS-36) for commercial adhesive.
- B. Use low-VOC adhesive during installation. Water based is preferred over solvent based adhesives.

2.04 PRIMER (FOR CONCRETE SUBFLOORS)

- A. As recommended by the adhesive and tile manufacturer.

2.05 LEVELING COMPOUND (FOR CONCRETE FLOORS)

- A. Provide cementitious products with latex or polyvinyl acetate resins in the mix.
- B. Determine the type of underlayment selected for use by the condition to be corrected.

2.06 EDGE STRIPS

- A. 28 mm (1-1/8 inch) wide unless shown otherwise.
- B. Bevel from maximum thickness to minimum thickness for flush joint unless shown otherwise.
- C. Extruded aluminum, mill finish, mechanically cleaned:
 - 1. Drill and counter sink edge strip for flat head screws.
 - 2. Space holes near ends and approximately 225 mm (9 inches) on center between.
- D. Resilient Edge Strip or Reducer Strip: Fed. Specs. SS-T-312, Solid vinyl.

2.07 SCREWS

- A. Stainless steel flat head screw.

PART 3 – EXECUTION

3.01 SUBFLOOR PREPARATION

- A. Verify that surfaces and areas to receive resilient flooring are satisfactory for their installation. If unsatisfactory conditions exist, do not commence installation until such conditions have been corrected. Installation of resilient flooring constitutes acceptance of subfloor conditions and agreement that the conditions meet flooring manufacturer's requirements.
- B. Examine surfaces to receive resilient flooring and verify that concrete slabs comply with ASTM F710 and the following:
 - 1. Slab substrates are dry and free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew. Determine adhesion characteristics by performing bond tests recommended by flooring manufacturer.

2. Subfloors are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.
- C. Fill cracks, joints and other irregularities in concrete with leveling compound:
 1. Do not use adhesive for filling or leveling purposes.
 2. Do not use leveling compound to correct imperfections which can be corrected by spot grinding.
 3. Trowel to smooth surface free of trowel marks, pits, dents, protrusions, cracks or joints.
- D. Clean floor of oil, paint, dust, and deleterious substances: Leave floor dry and cured free of residue from existing curing or cleaning agents.
- E. Concrete Subfloor Testing: Determine Adhesion and dryness of the floor by bond and moisture tests as recommended by RFCI manual MRP.
- F. Perform additional subfloor preparation to obtain satisfactory adherence of flooring if subfloor test patches allows easy removal of tile.
- G. Prime the concrete subfloor if the primer will seal slab conditions that would inhibit bonding, or if priming is recommended by the tile or adhesive manufacturers.
- H. Preparation of existing installation shall include the removal of existing resilient floor and existing adhesive. Do not use solvents to remove adhesives.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions for application and installation unless specified otherwise.
- B. Mix tile from at least two containers. An apparent line either of shades or pattern variance will not be accepted.
- C. Tile Layout:
 1. If layout is not shown on drawings, lay tile symmetrically about center of room or space with joints aligned.
 2. No tile shall be less than 150 mm (6 inches) and of equal width at walls.
 3. Place tile pattern in the same direction; do not alternate tiles.
- D. Trim tiles to touch for the length of intersections at pipes and vertical projections, seal joints at pipes with waterproof cement.
- E. Application:
 1. Apply adhesive uniformly with no bare spots.
 1. Conform to RFC1-TM-6 for joint tightness and for corner intersection unless layout pattern shows random corner intersection.
 2. More than 5 percent of the joints not touching will not be accepted.
 2. Roll tile floor with a minimum 45 kg (100 pound) roller. No exceptions.
 3. The COR may have test tiles removed to check for non-uniform adhesion, spotty adhesive coverage, and ease of removal. Install new tile for broken removed tile.
- F. Installation of Edge Strips:
 1. Locate edge strips under center line of doors unless otherwise shown.

2. Set resilient edge strips in adhesive. Anchor metal edge strips with anchors and screws specified.
3. Where tile edge is exposed, butt edge strip to touch along tile edge.

3.03 CLEANING AND PROTECTION

- A. Clean adhesive marks on exposed surfaces during the application of resilient materials before the adhesive sets. Exposed adhesive is not acceptable.
- B. Keep traffic off resilient material for a minimum 72 hours after installation.
- C. Clean materials in the following order:
 1. For the first two weeks sweep and damp mopped only.
 2. After two weeks, scrub resilient materials with a minimum amount of water and a mild detergent. Leave surface clean and free of detergent residue.
- D. When construction traffic occurs over tile, cover resilient materials with reinforced kraft paper properly secured and maintained until removal is directed by COR. At entrances and where wheeled vehicles or carts are used, cover tile with plywood, hardboard, or particle board over paper, secured and maintained until removal is directed by COR.
- E. When protective materials are removed and immediately prior to acceptance, replace any damage tile, re-clean resilient materials, and buff floors.

3.04 LOCATION

- A. Unless otherwise specified or shown, install tile flooring, on floor under areas where furniture and other equipment occurs, except where mounted in wall recesses.
- B. Extend tile flooring for room into adjacent closets and alcoves.

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